

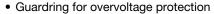
Vishay General Semiconductor

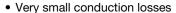
# **Schottky Barrier Plastic Rectifier**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	2.0 A					
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V					
I <sub>FSM</sub>	60 A					
V <sub>F</sub>	0.50 V, 0.68 V					
T <sub>J</sub> max.	125 °C, 150 °C					
Package	DO-204AC					
Diode variations	Single					

#### **FEATURES**





· Extremely fast switching

Low forward voltage drop

High forward surge capability

• High frequency operation

• Solder dip 275 °C max. 10 s, per JESD 22-B106

 Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### **TYPICAL APPLICATIONS**

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

#### **MECHANICAL DATA**

Case: DO-204AC (DO-15)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V	
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	35	42	V	
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	V	
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	I <sub>F(AV)</sub>	2.0					А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	60					А	
Maximum full load reverse current, full cycle average at T <sub>A</sub> = 75 °C	I <sub>R(AV)</sub>	30					mA	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000					V/µs	
Operating junction temperature range	TJ	- 65 to + 125 - 65 to + 150				°C		
Storage temperature range	T <sub>STG</sub>	- 65 to + 150					°C	



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Maximum instantaneous forward voltage	2.0 A		V <sub>F</sub> <sup>(1)</sup>	0.50		0.68		V	
Maximum instantaneous reverse current		T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>		0.50				mA
at rated DC blocking voltage		T <sub>A</sub> = 100 °C	'R\'	15		8.0		ША	
Typical junction capacitance			C <sub>J</sub> 170				pF		

#### Note

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Typical thermal registance	R <sub>0JA</sub> (1)		45				°C/W
Typical thermal resistance	R <sub>0JL</sub> (1)	14					C/VV

#### Note

<sup>(1)</sup> Thermal resistance junction to lead PCB mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
SB240-E3/54	0.398	54	4000	13" diameter paper tape and reel					
SB240-E3/73	0.398	73	2000	Ammo pack packaging					

#### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

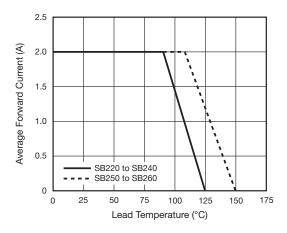


Fig. 1 - Forward Current Derating Curve

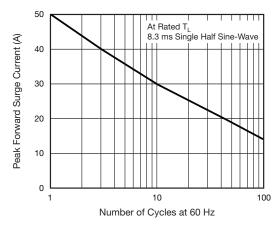


Fig. 2 - Maximum Non-Repetitive Surge Current

0

20

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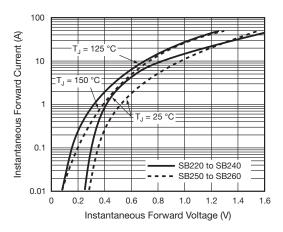
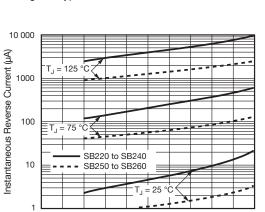


Fig. 3 - Typical Instantaneous Forward Characteristics



Percent of Rated Peak Reverse Voltage (%)
Fig. 4 - Typical Reverse Characteristics

40

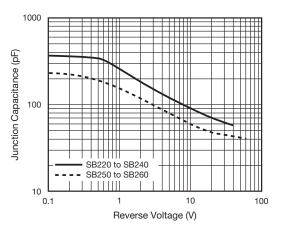


Fig. 5 - Typical Junction Capacitance

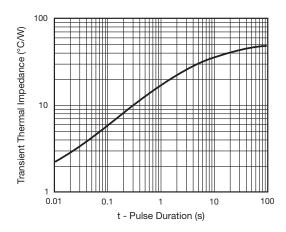


Fig. 6 - Typical Transient Thermal Impedance

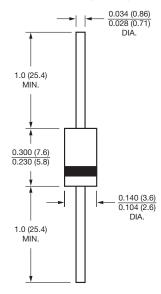
### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

60

80

100

#### DO-204AC (DO-15)





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